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01 September 2010

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Other

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Peer-reviewed

### Citation for published item:

Sawdon, M. (2010) 'Promoting long term knowledge retention by use of KEEPad audience response system.', Engaging Students Through In-class Technology : ESTICT. eScience Institute, University of Edinburgh, 29 April 2010.

### Further information on publisher's website:

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**ESTICT meeting, Edinburgh**  
**29<sup>th</sup> April 2010**

Title: Promoting Long Term Knowledge Retention by use of KEEpad Audience Response Systems  
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**INTRODUCTION:** Knowledge retention following didactic teaching decays at an undesirable rate. The use of audience response systems (ARSs) has been suggested to improve and facilitate learning in a didactic lecture setting by increasing student participation, giving instant feedback, and improving knowledge retention.

**METHOD:** 102 undergraduate medical students attended lectures incorporating the use of the ARS KEEpad. KEEpad was used to ask the students an MCQ before the lecture to assess prior knowledge; at the end of the lecture assessing understanding; and 4 weeks later assessing knowledge retention. Evaluation forms completed by students included 3 questions on the use of KEEpad; *The KEEpad audience response system gives me feedback on my progress*, *The KEEpad audience response system aids my knowledge recall* and *The KEEpad audience response system consolidates my knowledge*.

**RESULTS:**  $46 \pm 16\%$  of the class selected the correct answer using the ARS, showing a moderate degree of prior knowledge. At the end of the lecture the percentage of students choosing the correct answer increased to  $66 \pm 20\%$ . One week after the lecture  $77 \pm 22\%$  chose the correct answer and 4 weeks later the percentage of students selecting the correct answer was  $79 \pm 14\%$ . The evaluation forms showed student satisfaction regarding use of the ARS was 99% for the first 2 questions asked and 98% for the latter.

**CONCLUSION:** The technology can be used to study the decay of knowledge at different time points after delivery of the learning experience, and we have found that retention is better than by conventional teaching and assessment methods. The low cost and flexibility of this approach makes it ideal in a number of teaching settings.